

## ABSTRACT

A composite structure forming method according to the present invention comprises the steps of first pre-treating brittle material fine particles to impart an  
5 internal strain to the brittle material fine particles, secondly causing the brittle material fine particles in which the internal strain has been created to collide with a substrate surface at high speed or applying a mechanical impact force to the brittle material fine particles containing the internal strain therein provided on the substrate surface, to  
10 deform or fracture the brittle material fine particles, re-joining the fine particles through active new surfaces generated by the deformation or fracture, forming an anchor section made of polycrystalline brittle material of which part bites into the substrate surface at a boundary section between the new surfaces and the substrate, and further forming a structure made of polycrystalline brittle material on the anchor section.